



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

January 22, 2014

Via E-mail

Pierre Legault
Chief Executive Officer
NephroGenex, Inc.
79 T.W. Alexander Drive
4401 Research Commons Building
Suite 290
P.O. Box 14188
Research Triangle Park, NC 27709

**Re: NephroGenex, Inc.
Amendment No. 1 to Registration Statement on Form S-1
Filed January 10, 2014
File No. 333-193023**

Dear Mr. Legault:

We have reviewed your amended registration statement and correspondence dated January 10, 2014 and have the following additional comment. In our comment, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comment applies to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to this comment, we may have additional comments.

Notes to Financial Statements

Note E – Stockholder's Deficiency Warrant 1 and 2, pages F-14 and F-33

1. We acknowledge your response to prior comment 3.
 - It does not appear that a Black-Scholes valuation model is appropriate for Warrant 2 as that model does not appear to take into account (a) the right of the Series A preferred stock to convert into common stock at any time and (b) the Series A preferred stock liquidation preference of twice the issuance price plus accrued and unpaid dividends. If you continue to believe it is appropriate, please tell us why.

- Please tell us why you believe it is appropriate to use the PWERM method to value Warrant 2 and what new or additional information became available to support a change to this methodology.
- With respect to the PWERM method, please provide further support for why you selected the discount rates (55%, which was the high end of the range, and 30%) you used.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Act of 1933 and all applicable Securities Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comment, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

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You may contact Ibolya Ignat at (202) 551-3656 or Jim Rosenberg at (202) 551-3679 if you have questions regarding comments on the financial statements and related matters. Please contact Austin Stephenson at (202) 551-3192, Dan Greenspan at (202) 551-3623, or me at (202) 551-3715 with any other questions.

Sincerely,

/s/ Daniel Greenspan for

Jeffrey P. Riedler
Assistant Director

cc: Via E-mail
Joel Papernik, Esq.
Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.